

1956 CATALOG

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PC

glass blocks

*for industrial, commercial
and public buildings*

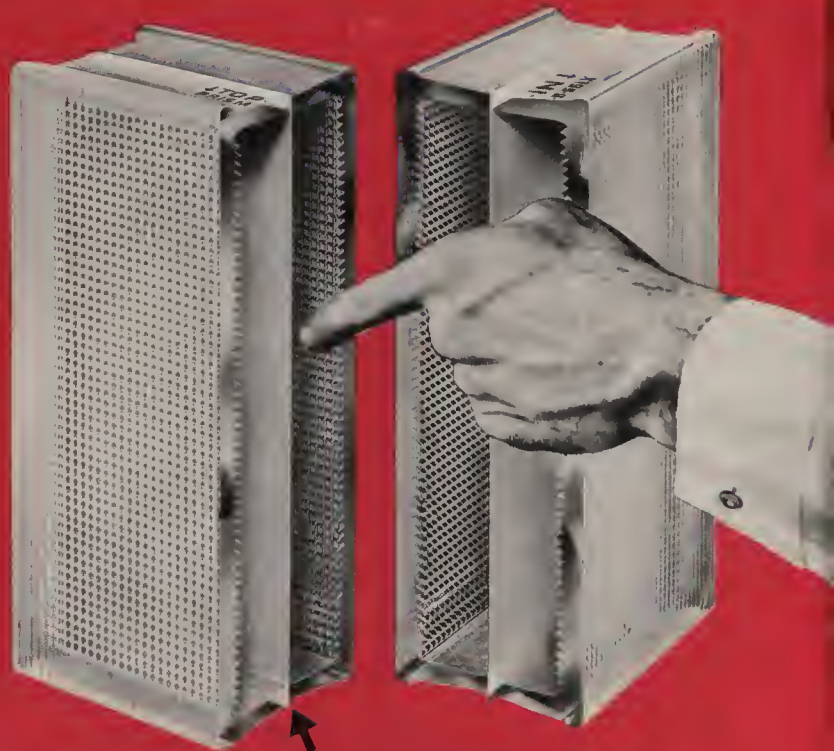


PITTSBURGH CORNING CORPORATION

PITTSBURGH, PA.

PC glass blocks

have insulating value
of masonry,
light transmitting properties
of glass



SOFT-LITE EDGE—SEE P. 10

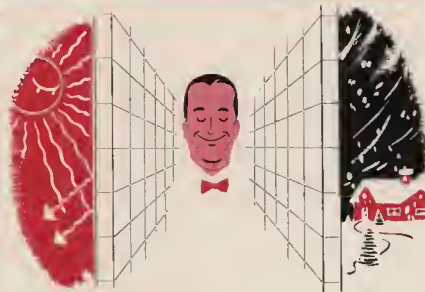
This is a cut section of a typical 12" PC Functional Glass Block. Notice the internal prisms that alter the path of light. Also notice the internal fibrous glass diffusing screen used in certain patterns to reduce heat transmission and excessive brightness.

BETTER DAYLIGHTING



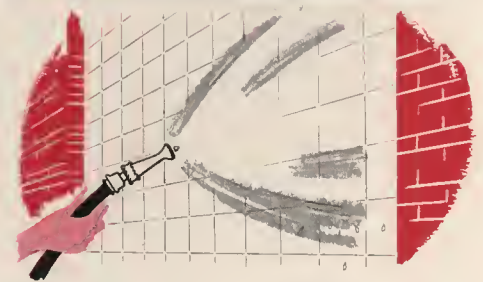
Look at the conventional windows in a nearby building. You'll notice that the blinds almost *always* are pulled down. PC Functional Glass Blocks take the blinding daylight and process it into useful, comfortable illumination. Blinds, shades and louvers are hardly ever needed with a proper PC Glass Block installation.

HIGH INSULATION VALUE



PC Glass Blocks are completely hollow, sealed glass units, containing dried air at a partial vacuum. They have roughly the same insulating value as an 8-inch masonry wall—that's twice as good as flat glass in steel sash. You save heating costs in winter, as well as air-conditioning costs in summer.

EASY TO CLEAN



A garden hose and a brush are all you need to clean a PC Glass Block panel, and you only have to do it once or twice a year. Even when they do get dirty, PC Glass Blocks don't *look* dirty. Long after ordinary windows look streaked and spotty, PC Glass Blocks look clear and clean.

Only Pittsburgh Corning has a block for every daylighting need

There are two basic kinds of PC Glass Blocks: functional and decorative. The *functional* blocks are true optical units, they do things to daylight. The *decorative* blocks are usually used when the particular pattern blends well with some decorative scheme.

PC *Functional* Glass Blocks contain built-in prisms and corrugations that alter the path of light. Some patterns bend the light rays upward onto the ceiling. These are termed *light-directing* blocks, and they are generally used above eye-level. Other patterns diffuse the light in all directions. These are known as *light-diffusing* blocks, and they are mostly used below or at eye-level. Light-diffusing and light-directing blocks both spread the daylight horizontally into the far corners of the room.

The orientation of the building has an influence on the selection of the right functional pattern. On northern exposures, where there is no direct sunlight, you can use a pattern that transmits a lot of light. But for sunlit elevations, patterns are available that reduce the light to a useable value and at the same time provide better insulation against radiant heat from the sun.

On the facing page you'll see a cutaway of a typical block. Notice the internal prisms that alter the path of light. Also notice the fibrous glass diffusing screen that reduces heat loss or gain. For very bright locations, this screen is produced in a soft green color. The result is Suntrol® blocks, with 35% less brightness than standard blocks. (See page 7)

There is nothing complicated about choosing the proper functional pattern. A simplified selection method is shown on pages 8 and 9, and supplementary material can be found on pages 10 through 13.

*T.M. Reg. Applied for.

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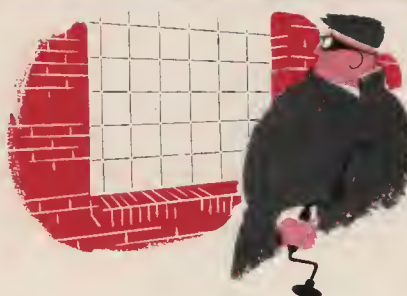
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LOW SURFACE CONDENSATION



PC Glass Blocks have licked many a condensation problem. Because of their high insulating value, it takes extreme temperature and humidity conditions to cause condensation on the block panel. PC Glass Blocks are widely used for high-humidity process plants. See page 12 for chart.

PRIVACY AND PROTECTION



PC Glass Blocks let in the light, but keep out the noise and dirt. Quiet areas can be established even in noisy factory surroundings. Because of their great strength, PC Glass Block panels offer superb protection against intruders. For vision to the outside, PC Vue Blocks can be installed.

LOW MAINTENANCE COSTS



PC Glass Blocks very often *pay for themselves* when they are installed to replace ordinary window sash. Low fuel and cleaning costs are only part of the reason. Glass block panels need no painting or puttying. Broken blocks are a rarity, and individual blocks are easily replaced.



glass blocks



"PC Glass Blocks have greatly reduced our maintenance expense," says V. V. Moulton, President of the Auto-Owners Insurance Company. Glass block panels are glass and mortar . . . nothing to reglaze or repaint and normal rainfall, in most cases, keeps them sparkling.

Architects: Lee & Kenneth Black, Lansing, Michigan



"We would not have been without PC Glass Blocks in our new plant," says George S. Mennen, Vice President, Mennen Company. Daylighting with PC Glass Blocks greatly increases employee efficiency



"We built the Mt. Savage School at 59½¢ per cu. ft. and PC Glass Blocks played a big part in the saving," says S. Russ Minter, A.I.A. Almost 50% of the exterior wall surface is glass block and the savings were effected by building the wall complete with fenestration rather than by gradative methods. Also, PC Glass Blocks allow modular coordination, permitting further construction economies.

Architect: S. Russ Minter, Cumberland, Maryland



"We'll save approximately 15% on our heating and air conditioning costs," says R. L. Kaufman of the J. B. Kaufman Realty Company. Heat loss through old, worn sash can be a staggering hidden cost in

in use

PC

glass blocks

typical installations



and morale . . . there's abundant light for all seeing tasks, and cheerfully daylighted rooms are a better place to work.

Architect: A. M. Kinney Associates, Cincinnati, Ohio



This picture of Pinecrest Cotton Mills typifies the beauty that can be achieved in industrial buildings by using PC Glass Blocks. The inherent beauty of glass combined with the functional ability of glass blocks to direct and diffuse soft, filtered daylight throughout any room, makes PC Glass Blocks an ideal building material for any industrial, public or commercial building. Architects: Hardy & Schumacher, Kansas City, Mo.



commercial buildings. Window modernization with PC Glass Blocks really pays, and you get a better-looking building in the bargain.

Contractor: W. J. Saukap, Inc., Bayside, L. I., N. Y.



Our Lady of Manadnock Academy

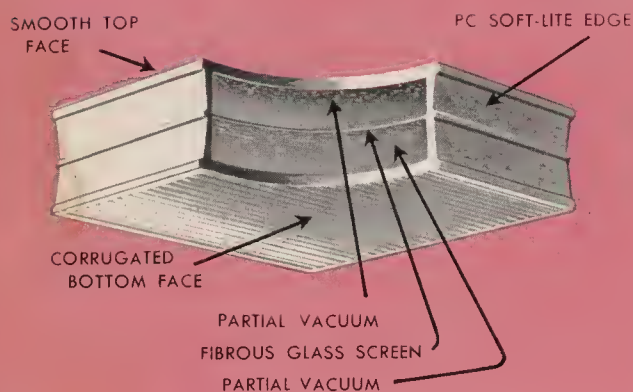
"PC Glass Blocks made our school a thing of beauty" says the Reverend John A. McSweeney. The clean, contemporary design appeal of PC Glass Block panels is widely accepted by architects everywhere. Here is a truly functional building material that will assure superior daylighting for the life of the structure, and remain a striking architectural accent.

Architects: Perley F. Gilbert Associates, Inc., Lowell, Mass.

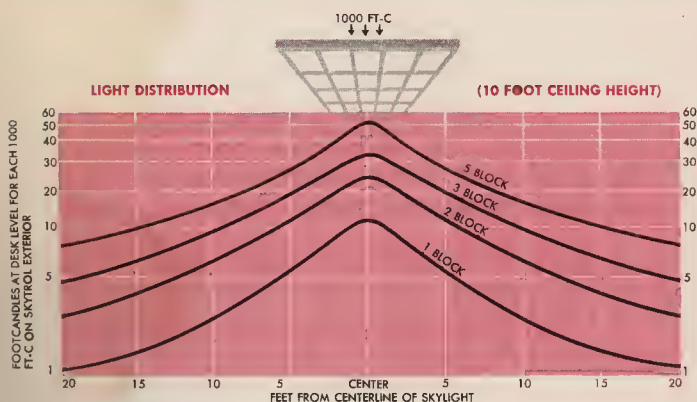
Herbert H. Glassman, A.I.A., Chief Architect, Edmund E. McMahan, Project Architect

SKYTROL® blocks

—for toplighting your buildings



DIMENSIONS: 3 3/4" THICK X 11 3/4" X 11 3/4"



Light Distribution—Even one small 5-block-wide Skytrol panel puts 22 footcandles on a desk top 8 feet from the panel centerline on an average overcast day.

Skytrol blocks are 11 3/4" square functional blocks specially designed for use in skylight panels.

Ordinary skylights present four big problems. They are: poor quality light, high maintenance costs, high heat loss, and condensation. Skytrol blocks, since they are installed as a masonry unit, eliminate steel sash and the necessary painting, calking and re-puttying.

Illumination is the most important Skytrol feature. As you can see from the chart at left, a 5-block wide Skytrol panel puts 22 footcandles on a desk top 8 feet from the panel centerline even on an average overcast day (1000 footcandles on panel).

Skytrol blocks have *twice* the insulating value of an ordinary skylight, so naturally they hold down the heating costs. "U" value of Skytrol block: 0.44. Flat glass is 1.13.

It takes extreme temperature and humidity conditions to cause condensation on a Skytrol panel. See the condensation chart on page 12.

Installation methods and properties of Skytrol Blocks are covered in another publication issued by Pittsburgh Corning Corporation. Send for publication GB-105, or see your PC representative.

For unusually bright locations, Skytrol Blocks are available with the pale green Suntrol diffusing screen. The screen reduces brightness by 35%, and it reduces instantaneous heat gain by 25%. Under average daylighting conditions, the special Suntrol screen is not required.



This is a Skytrol research room at Pittsburgh Corning. Photocells are used to take simultaneous readings in all parts of the room. Notice magnificent quality of the light.

The picture, taken at the Mill Street School, Port Allegany, Pa., shows how effectively Skytrol blocks spread soft, natural light through a deep, low-ceilinged classroom.



Suntrol blocks



glass blocks

—for the reduction of heat and glare



Suntrol blocks are functional glass blocks specially designed for use where extreme daylighting conditions create glare and heat.

The standard line of functional PC Glass Blocks is a careful balance between maximum usable illumination and low panel brightness. In fact, there is no other simple method of fenestration that will give such high illumination along with such low brightness level. But, in those cases where glare and instantaneous heat gain are a problem, Suntrol blocks are the answer. They have 35% less brightness and 25% less instantaneous heat gain than standard glass blocks.

The Secret of Suntrol

The big difference between Suntrol and the standard functional blocks is the screen [(1) in top photograph]. It has greater density than the screen used in the LX blocks and is a pale green color. As in the standard block the prisms (2) pressed on the inside of the block halves direct or diffuse the light according to the pattern selected. Also, similar to the standard functional blocks, it has the opal glass edge sealed between the two block halves (3). This is the PC Soft-Lite Edge for the prevention of edge glare.

35% Less Brightness

The middle picture shows the reduction in glare. Calibrated photocells were used to make sure that each light source had the same brightness. The brightness reading through the flat glass is 97 (simply a reference point). Through the Suntrol block, the same intensity light source reads 16. This amounts to a 6:1 reduction of brightness. A similar comparison between Suntrol and a standard functional block showed a reduction of 35%.

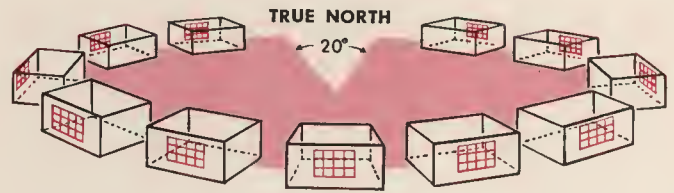
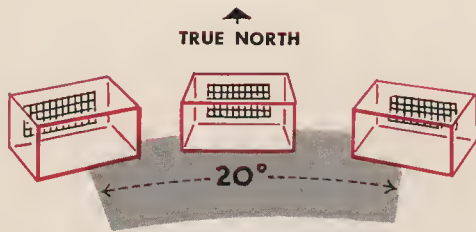
25% Less Heat Gain

The bottom pictures tell the story of instantaneous heat gain reduction. The instrument used here was a radiometer. This is not a precise measurement of heat gain, but it is a good guide to the human comfort factor. Note, in the picture using flat glass, the light source gives a radiant heat rating of 72. Through the Suntrol block, the same intensity light source gives a reading of only 5. This is the instantaneous radiant heat you actually *feel* through the panel. The same comparison made between a standard functional block and Suntrol showed a 25% reduction in instantaneous heat gain.

Suntrol blocks are available in three different patterns: *light-directing* Prism Suntrol, *light-diffusing* Essex Suntrol and in the Skytrol pattern for *toplighting*. Prism and Essex are available in 8 inch and 12 inch sizes; Skytrol in the 12 inch only.



how to pick the right functional block



1. Determine whether or not the panel will face within 10° of either side of true North. If the panel *does* face north, it will never receive direct sunlight, so you need *non-sun exposure* blocks. These transmit the maximum amount of light. They are described below.

2. If the panel does *not* face within 10° of true North, the panel will probably be exposed to the direct rays of the sun at some time during the day. Therefore, you need *sun exposure* blocks that will temper the light, reduce brightness and radiant heat. These are described below.

NON-SUN EXPOSURE BLOCKS



ABOVE EYE-LEVEL

NO direct sun

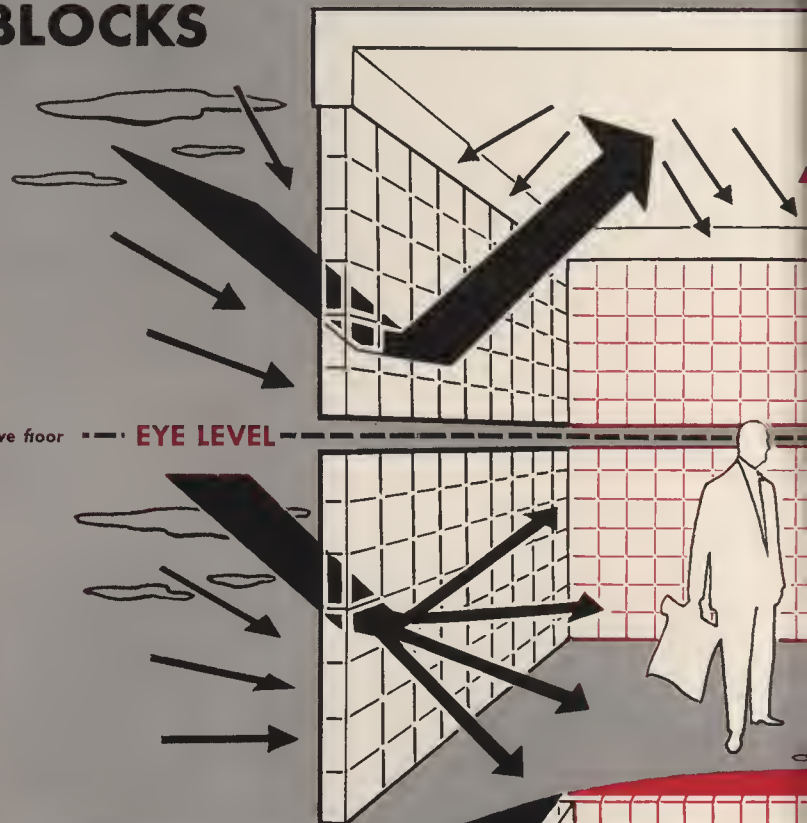
PRISM A. This light-directing block transmits maximum amount of light upward toward the ceiling.



BELOW EYE-LEVEL

NO direct sun

BRISTOL. This light-diffusing block transmits maximum amount of light diffused in all directions.



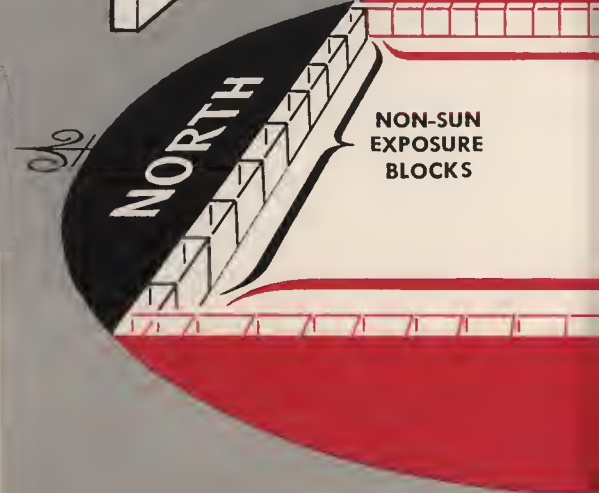
Light-directing blocks are fully effective only with light-colored, high reflectance ceilings. Where ceilings are dark or cluttered, use light-diffusing blocks above eye-level as well as below.

special purpose block BRISTOL LX

When it is not practical to combine various functional blocks described above, it is possible to use Bristol LX throughout the entire building. It is frequently used for sash replacement jobs when fenestration openings do not permit ideal block selection. Sometimes ceilings are so high or cluttered that little light would be reflected downward if standard light-directing blocks were used. Since it is a light-diffusing block, the Bristol LX can be used for this kind of problem.

This block is also widely used where maximum insulation is required. It is divided into two cavities by the LX fibrous glass screen, thus it reduces heat loss as well as heat gain from the sun.

If you are in doubt as to the right block, get in touch with your PC representative.



for your building

(for decorative patterns, see page 14)

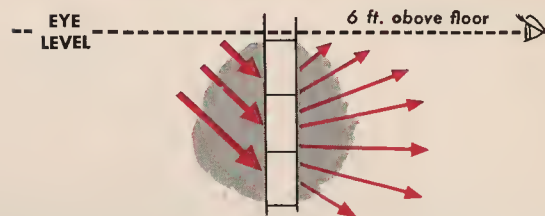
PC

glass blocks

functional block selection



3. Determine whether the panel will be above or below eye-level (6 feet). If *above* eye-level, specify light-directing blocks that throw the light upward and onto the ceiling. Do not use these blocks below eye-level because they will throw light up into your eyes.



4. If the panel will be at or *below* eye-level, specify light-diffusing blocks. These blocks diffuse the light in all directions, and they will not throw blinding light up into your eyes.

For extreme brightness conditions, special Suntrol Blocks are available with a pale green fibrous glass diffusing screen that reduces brightness by 35%, and instantaneous heat gain by 25%. See ordering information under "Sizes Available."

SUN EXPOSURE BLOCKS

ABOVE EYE-LEVEL

DIRECT sunlight

PRISM B • PRISM B LX • PRISM SUNTROL. These light-directing blocks temper the raw sunlight and throw it upward toward the ceiling. Soft-Lite® edge eliminates over-bright block edges.

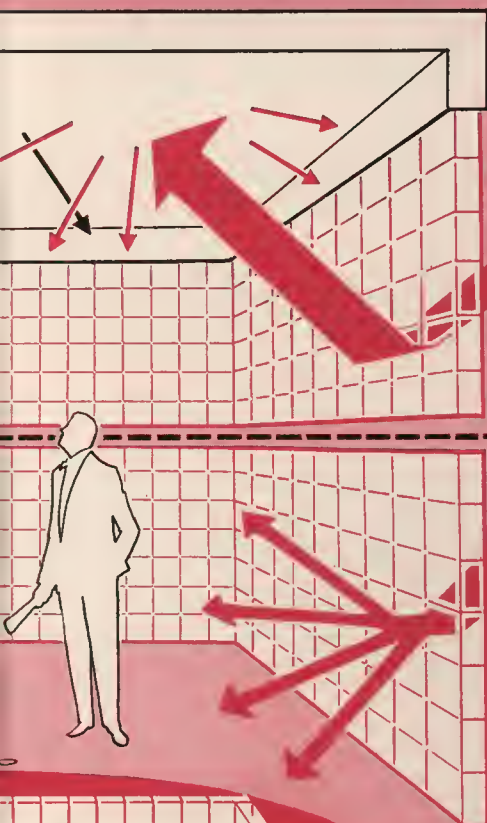
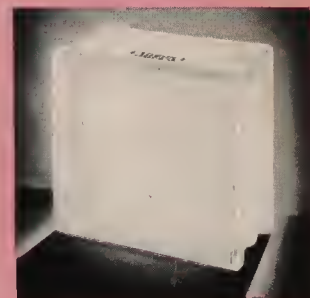


EYE LEVEL — 6 ft. above floor

BELOW EYE-LEVEL

DIRECT sunlight

ESSEX • ESSEX LX • ESSEX SUNTROL. These light-diffusing blocks temper the raw sunlight and diffuse it in all directions. Soft-Lite edge eliminates over-bright block edges.



SUN EXPOSURE BLOCKS

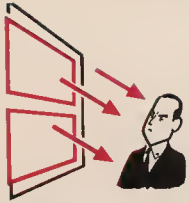
SOUTH

SIZES AVAILABLE

			7 3/4" Square	11 3/4" Square
NON-SUN EXPOSURE	Above eye level	Prism A	■	■
	Below eye level	Bristol	■	
SUN EXPOSURE	Above eye level	Prism B Prism B LX Prism Suntrol	■ ■ ■	■ ■ ■
	Below eye level	Essex Essex LX Essex Suntrol	■ ■ ■	■ ■ ■
	SPECIAL PURPOSE	Bristol LX	■	

- Every block is stamped to show proper positioning in the panel. Directions must be followed carefully. In addition, special "finger-feel" ridges are cast into the top mortar edge of most patterns to further assist the mason.
- All PC Functional Glass Blocks are 3 7/8" thick.

daylighting performance data



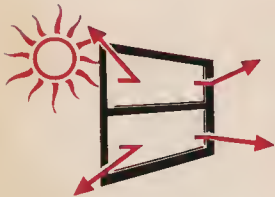
It is no problem to get daylight into a room. You can do it with large win-

dows. The only trouble is that you cannot *use* all of this raw daylight.



Most daylight comes from the sky. It bores down through the ordinary window like a giant spotlight. If you have to sit near this window, you automa-

tically reach for the window blind because you cannot stand the blinding light from the sky. If you are in the direct path of the sun, you simply wilt.



Oddly enough, it isn't the *intensity* of the light that bothers you, it's the quality. If you could take the total amount of light from that theoretical

window and spread it out over the walls, floor and ceiling, you'd be perfectly comfortable, and you'd have plenty of light to do the most critical seeing tasks.

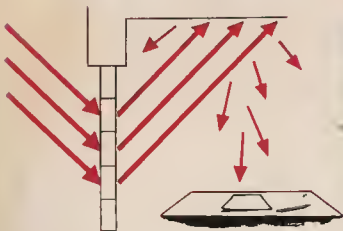


This "spreading the light out" is what we do with PC Functional Glass Blocks.



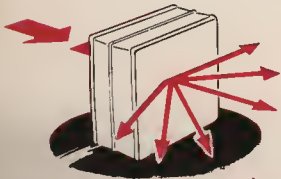
Most visual discomfort comes from too much contrast in the light. The pupil of your eye adjusts for the bright light from the window. Then it has to *re-*

adjust to the darker interior when you turn away from the window. It is this constant process of readjustment that often causes eye strain and fatigue.



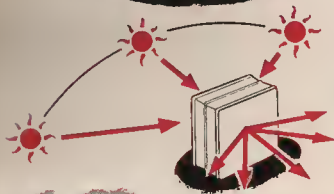
Consider PC light-directing blocks for above eye-level use. Instead of allowing the light to pour down onto *you*, these glass blocks bend the light rays back up to the ceiling. If the ceiling has a high reflectance and is not too high,

the light rays are diffused back down onto the working surfaces. Instead of concentrated light from a window, you get diffused light from the entire ceiling. There is less contrast. There is less eye strain.



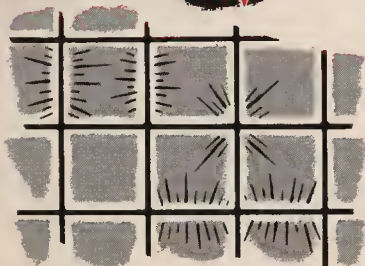
Spread lens effect. The inner face corrugations spread the light *sideways*

into the room. Thus, you get diffused reflection from the ceiling *and* walls.



Sun angle control. The outer faces of PC Functional Glass Blocks contain vertical corrugations that compensate for sun angle. As the sun moves from

east to west, the angle of light changes. The block corrugations insure that a maximum amount of light is transmitted inside regardless of sun angle.



Soft-Lite edges are installed on all PC Functional Glass Blocks designed for sun exposures. This special edge is an obscure, opal glass insert at the edge seal. (See cutaway view p. 2.) It reduces brightness of the block at its edge

so that the entire panel has uniform appearance. *Non-sun* exposure blocks (Prism A and Bristol) do not have this edge, so they are not recommended where direct sun rays will hit the block panel.

● = average brightness in foot-lamberts

↓ = average illumination in foot-candles

PC

glass blocks

daylighting performance data

2 typical daylighting surveys

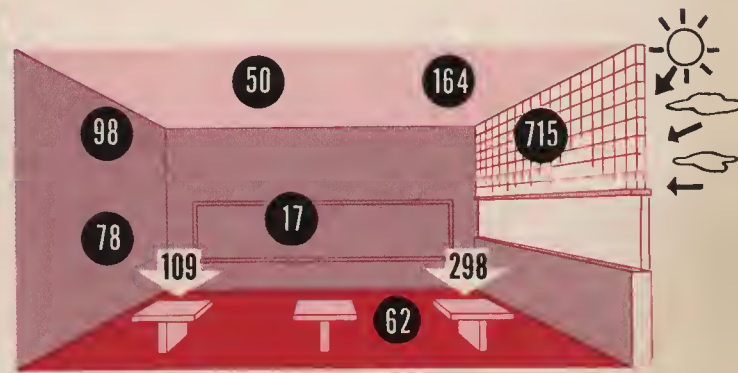


Edward Everett Elementary School, Detroit, Michigan
Architects: Giffels & Vallet, Inc.; L. Rosetti

Classrooms: 22' x 30'6", with 12'1" ceiling
183 sq. ft. glass block panel (27.3% of floor area)
80 sq. ft. vision sash (11.9% of floor area)

North Room: 8" Prism A Blocks
Illumination of Panels: 1700 foot-candles. Canopy shaded vision strip.

Surface Reflectances: Ceiling, 75%; Walls, 45%, 50%;
Chalkboards, 10%; Tackboards, 25%;
Dado, 45%; Floor & Desk Tops, 35%.



Carthage Junior-Senior High School, Carthage, Texas
Architect: Preston M. Geren

Classrooms: 22' x 29'8", with 11'10½" ceiling
156 sq. ft. glass block panel (23.4% of floor area)
73 sq. ft. vision sash (11.1% of floor area)

South Room: 8" Soft-Lite Prism B Blocks
Illumination of Panels: 4210 foot-candles; Sun Altitude, 67°-70°;
Sun Azimuth, minus 5° to 25°. Canopy shaded vision strip.

Surface Reflectances: Ceiling, 74%; Walls, 52%, 68%;
Chalkboards, 18%; Tackboards, 32%; Floor, 30%.

TYPICAL ILLUMINATION VALUES

FENESTRATION

DAYLIGHT ILLUMINATION ON WORK PLANE In Footcandles*

MAIN PANELS	Nominal PC Block Size	NO SUN						SUN EXPOSURE					
		FEET FROM						FENESTRATION					
		5	10	15	20	25	30	5	10	15	20	25	30
Prism A	8"	46	33	24	16	13	10						
	12"	50	44	32	22	18	15						
Bristol	8"	35	24	18	10	7	8						
Prism B	8"	35	25	18	12	10	8	58	43	31	22	16	13
Prism B LX	8"	30	21	18	10	8	7	49	36	25	19	16	11
Prism B LX	12"							43	32	23	15	11	9
Essex	8"	32	22	18	10	8	5	49	35	25	17	12	10
Bristol LX	8"	22	16	11	7	5	3	30	22	16	11	9	8
Essex LX	8"	27	19	13	8	6	4	41	30	21	14	10	8
Essex LX	12"	29	20	14	9	7	4	33	20	14	10	8	6
CLERESTORY PANELS (Minimum Sill Ht. 9')													
Prism A	8"	52	35	21	19	11	8						
	12"	69	46	28	25	14	10						
Prism B	8"	38	26	16	14	9	7	55	43	30	22	13	8
Prism B LX	12"							41	30	18	13	8	6
SHADED VISION WINDOWS	Sash and Shades	12	9	6	5	4	3	13	8	5	4	3	2

NOTE: All data assumes each fenestration area equal to 25% of floor area. (Large Panel + Clerestory + Vision Window Area — 75%) Reduce in proportion for smaller areas.

*For each 1000 footcandles on exterior plane of fenestration
Reduce Prism B LX or Essex LX values by 35% to obtain illumination for corresponding Suntrol patterns.

physical performance data



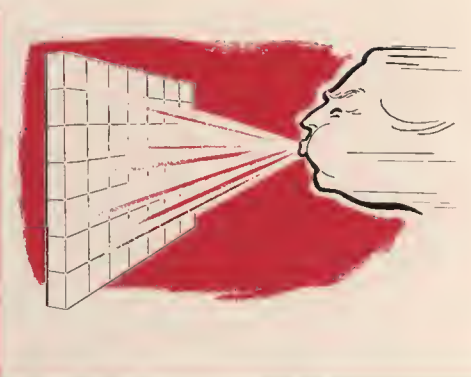
BOND STRENGTH

All PC Glass Blocks are coated on mortar edges with a resilient plastic, containing marble chips. This insures tight bond between block and mortar.



STRUCTURAL STRENGTH

400 to 600 pounds per square inch is the compressive strength of a PC Glass Block panel. While this is higher than many masonry constructions, never use glass blocks for load bearing walls.

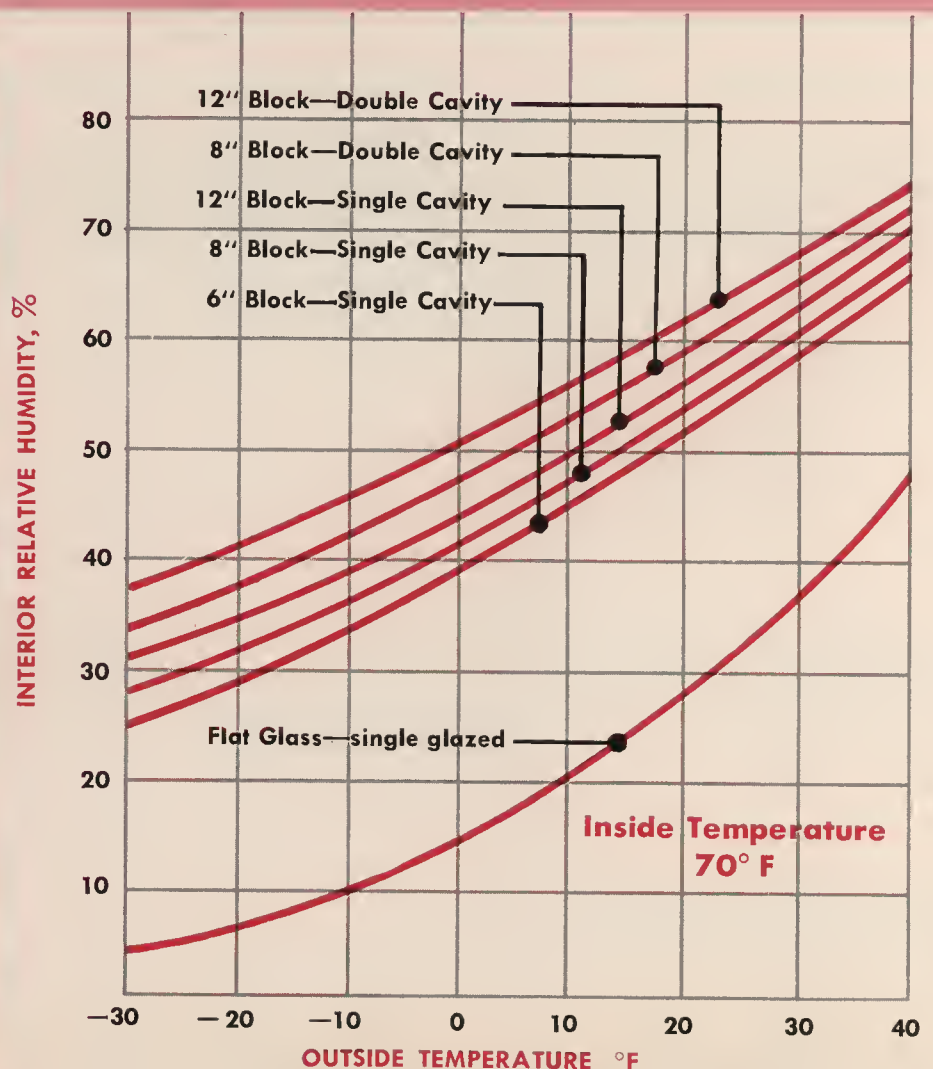


WIND LOAD RESISTANCE

Within recommended area limits (see pages 16-21), PC Glass Block panels will withstand wind load of 20 pounds per square foot. Safety factor: 2.7.

surface condensation

How to use the chart: To solve typical problem, chart shows that with an inside temperature of 70°F. and relative humidity of 40%, it takes an outside temperature of minus 24° to cause condensation on a panel of 12-inch double cavity LX blocks such as the Essex LX. Under the same conditions, condensation will form on a single-glazed flat glass window at plus 33°F.



physical performance data



WEATHER RESISTANCE

Panels show no sign of deterioration under severe weather cycle tests (heat, water spray and freezing—glass surface temperatures, 155° F to Minus 40° F).



SOUND REDUCTION

Average sound reduction factor for PC Glass Block panel: 40.7 decibels. Equal to the *difference* in noise between an average factory and a quiet home.



THERMAL INSULATION VALUES

The high insulation value of PC Glass Blocks is the result of 1) the partial vacuum in each hermetically sealed block and 2) the fibrous glass diffusing screen in certain patterns that creates *two* dead air spaces.

GLASS BLOCK TYPE (Nominal Sizes)	"U" (8tu/hr./sq.ft./°F)
6" Square—Single Cavity	0.60
8" Square—Single Cavity	0.56
8" Square—Double Cavity	0.48
12" Square—Single Cavity	0.52
12" Square—Double Cavity	0.44

solar heat gain values—Table lists total instantaneous heat gain rates caused by direct and diffused radiation from the sun. It covers the *total* transmission (including convection and radiation) from unshaded panels of 8-inch PC Glass Blocks.

Instantaneous heat gain in Btu/hr./sq. ft.

GLASS BLOCK TYPE (See below)

SUN TIME	DRY BULB TEMP. (outdoor) °F	I						II						III						IVA						V					
		N	E	SE	S	SW	W	N	E	SE	S	SW	W	N	E	SE	S	SW	W	N	E	SE	S	SW	W	N	E	SE	S	SW	W
8 a.m.	77	7	118	70	8	6	6	7	109	65	8	6	6	6	93	54	7	5	5	5	80	44	6	4	4	5	98	47	6	4	4
9	80	7	94	76	17	8	9	7	85	71	16	8	9	6	73	62	14	7	8	5	73	60	12	6	7	5	88	71	13	6	7
10	83	10	67	69	29	10	11	10	66	67	28	10	11	8	58	60	24	9	9	7	63	66	23	8	8	8	69	71	28	8	9
11	87	12	44	56	39	14	14	12	43	55	39	14	14	10	40	52	35	12	12	9	40	57	38	11	11	10	41	58	40	11	12
12	90	14	24	41	42	24	16	14	24	41	42	24	16	12	22	38	40	20	14	11	21	41	45	18	13	12	22	39	45	19	14
1 p.m.	93	16	22	23	46	49	27	16	22	23	46	48	26	14	20	21	42	45	23	13	19	20	45	50	23	14	20	20	47	51	24
2	94	17	23	18	42	74	59	17	23	18	41	72	58	15	21	17	37	65	50	14	20	16	36	71	55	15	21	16	41	76	60
3	95	18	23	18	33	93	102	18	23	13	32	88	96	17	22	17	30	79	81	16	21	16	28	77	81	16	21	16	29	88	96
4	94	18	21	17	23	94	136	18	21	17	23	89	127	17	20	17	22	78	100	16	19	15	21	68	87	16	19	15	21	71	105
5	93	17	19	16	19	81	142	17	19	16	19	77	134	16	18	15	18	68	114	15	17	14	17	58	94	15	17	14	17	58	94
6	91	20	15	13	15	54	104	20	15	13	15	52	97	19	14	12	14	49	90	18	14	12	14	42	69	18	14	12	14	42	69

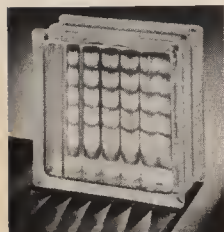
PC Glass Block types (8-inch) which correspond to ASHVE Types I to V are as follows:

- Type I—Argus, Argus Parallel Flutes, Decora, Vue*
- Type II—Bristol
- Type III—Bristol LX
- Type IVA—Essex
- Type V—Prism A, Prism B

- Table assumes clear atmosphere, 75°F. indoor temperature, 18° declination north (for August 1), 40° north latitude.
- For industrial atmospheres, reduce total heat gain 20% on east and west elevations, 5% on south elevations.
- For each degree that design room temperature exceeds 75°F., subtract 0.5 from values shown. For each degree that outdoor dry bulb temperature exceeds 95°F., add 0.5 to values shown.
- Above data taken from tables 19 to 23 of Chapter 13, "Heating, Ventilating & Air Conditioning Guide," 1955.

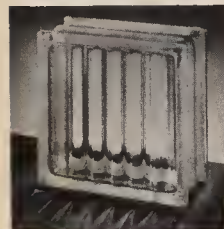
decorative patterns

As you can tell from the name, these are *decorative*, not functional PC Glass Blocks. They are not recommended where superior daylighting is the important goal. Decorative blocks are intended for installations where the decorative appearance of the panel outweighs its daylighting characteristics.



ARGUS—High light transmission. Sparkling highlights in sunlight. Good privacy. Can be laid with flutes vertical or horizontal on room side.

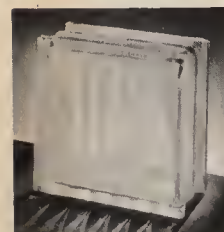
Outer faces are smooth. Rounded flutes on each inner face, at right angles to each other.



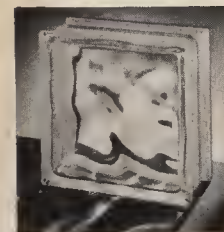
ARGUS PARALLEL FLUTES—High light transmission. Sparkling sun highlights. Fair privacy.

Same basic block as Argus, except that flutes on both faces are parallel. Can be laid with flutes vertical or horizontal.

Outer faces are smooth. Rounded flutes are on each inner face, parallel to each other.



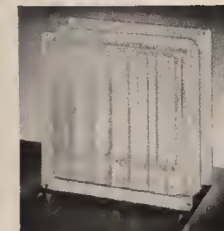
ARGUS PARALLEL FLUTES LX—Uniform brightness, complete privacy, good light transmission. Same block as Argus Parallel Flutes with LX fibrous glass diffusing screen for increased light diffusion and better insulation value.



DECORA—High light transmission. Sparkling highlights in sun. Almost transparent.

Can be laid without considering which edge is side or top.

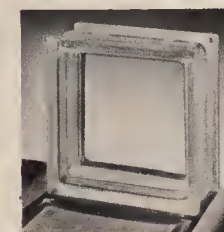
Smooth outer faces. Design is pressed into inner faces.



SAXON—Complete privacy. Good light transmission. Uniformly bright in sunlight.

Usually laid with narrow outer reeds vertical for easy cleaning.

Shallow, narrow reeds on outer faces, parallel to wide flutes on inner faces. Inner faces are lightly etched.



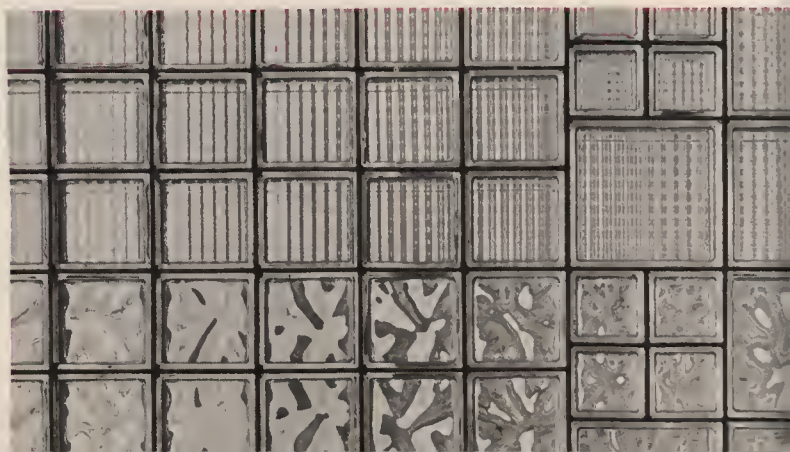
VUE—Good visibility through panel. High light transmission.

Frequently used with other patterns to permit visibility and prevent "shut-in" feeling. When observer is close to panel, visibility is good. Can be laid without considering which edge is side or top.

Outer and inner faces are smooth and clear.

Decorative blocks transmit plenty of light, but they don't control it as well as the functional patterns. They are not *designed* to control daylight.

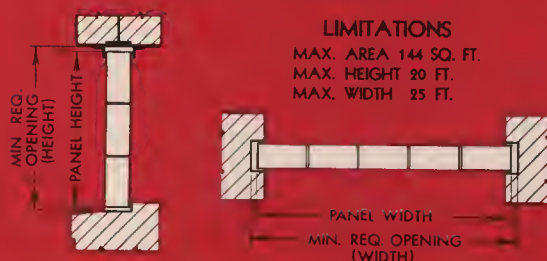
SIZES AVAILABLE			Decorative Patterns
5 3/4"	7 3/4"	11 3/4"	
			ARGUS
			ARGUS PARALLEL FLUTES
			ARGUS PARALLEL FLUTES LX
			DECORA
			SAXON
			VUE



layout table for **PC** glass blocks

(based on modular coordination
assuming $\frac{3}{8}$ " mortar joints in face brick and $\frac{1}{4}$ "
mortar joints between glass blocks)

CHASE CONSTRUCTION



ESTIMATING DATA

for 100 sq. ft. of panel, $\frac{1}{4}$ " mortar joints

nom. block size	6"	8"	12"
no. of blocks	400	225	100
weight of panel	2000 lbs.	1800 lbs.	1900 lbs.
volume of mortar	4.3 cu. ft.	3.2 cu. ft.	2.2 cu. ft.

MODULAR COORDINATION

All PC Glass Blocks are made in modular coordinated sizes. They can be laid in the standard grid based on a module of 4 inches. Information on Modular Coordination can be obtained from the Secretary for Modular Coordination. The American Institute of Architects, The Octagon, 1741 New York Ave., N. W., Washington 6, D. C.

actual panel width or height

—for minimum required opening width use table dimensions adding $\frac{1}{2}$ ". For minimum required opening height, add $\frac{3}{8}$ " plus maximum lintel deflection.

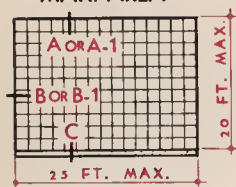
NO. OF
BLOCKS

	6"	8"	12"
	5 $\frac{3}{4}$ " x 5 $\frac{3}{4}$ "	7 $\frac{3}{4}$ " x 7 $\frac{3}{4}$ "	11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "
1	0' 6"	0' 8"	1' 0"
2	1' 0"	1' 4"	2' 0"
3	1' 6"	2' 0"	3' 0"
4	2' 0"	2' 8"	4' 0"
5	2' 6"	3' 4"	5' 0"
6	3' 0"	4' 0"	6' 0"
7	3' 6"	4' 8"	7' 0"
8	4' 0"	5' 4"	8' 0"
9	4' 6"	6' 0"	9' 0"
10	5' 0"	6' 8"	10' 0"
11	5' 6"	7' 4"	11' 0"
12	6' 0"	8' 0"	12' 0"
13	6' 6"	8' 8"	13' 0"
14	7' 0"	9' 4"	14' 0"
15	7' 6"	10' 0"	15' 0"
16	8' 0"	10' 8"	16' 0"
17	8' 6"	11' 4"	17' 0"
18	9' 0"	12' 0"	18' 0"
19	9' 6"	12' 8"	19' 0"
20	10' 0"	13' 4"	20' 0"
21	10' 6"	14' 0"	21' 0"
22	11' 0"	14' 8"	22' 0"
23	11' 6"	15' 4"	23' 0"
24	12' 0"	16' 0"	24' 0"
25	12' 6"	16' 8"	25' 0"
26	13' 0"	17' 4"	
27	13' 6"	18' 0"	
28	14' 0"	18' 8"	
29	14' 6"	19' 4"	
30	15' 0"	20' 0"	
31	15' 6"	20' 8"	
32	16' 0"	21' 4"	
33	16' 6"	22' 0"	
34	17' 0"	22' 8"	
35	17' 6"	23' 4"	
36	18' 0"	24' 0"	
37	18' 6"	24' 8"	
38	19' 0"	25' 4"	
39	19' 6"		
40	20' 0"		
41	20' 6"		
42	21' 0"		
43	21' 6"		
44	22' 0"		
45	22' 6"		
46	23' 0"		
47	23' 6"		
48	24' 0"		
49	24' 6"		
50	25' 0"		

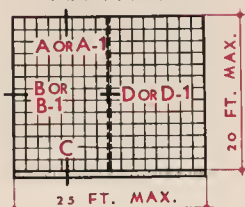
exterior panels—up to 250 sq. ft.

INDIVIDUAL PANELS

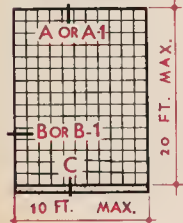
144 SQ. FT.
MAX. AREA



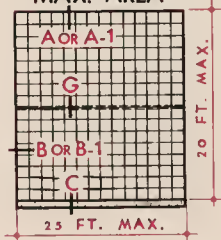
250 SQ. FT.
MAX. AREA



144 SQ. FT.
MAX. AREA

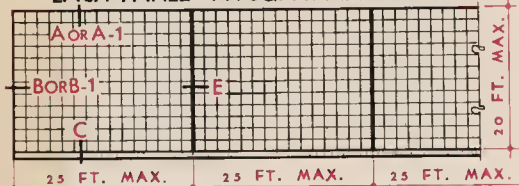


250 SQ. FT.
MAX. AREA

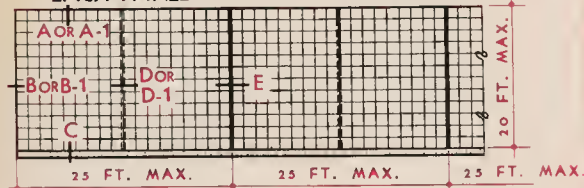


CONTINUOUS PANELS

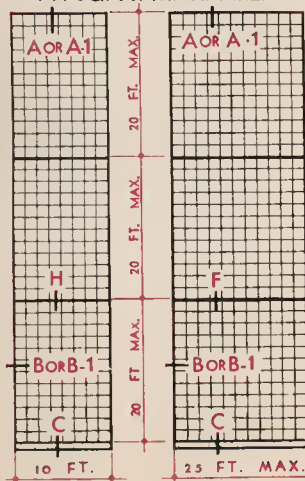
EACH PANEL 144 SQ. FT. MAX. AREA



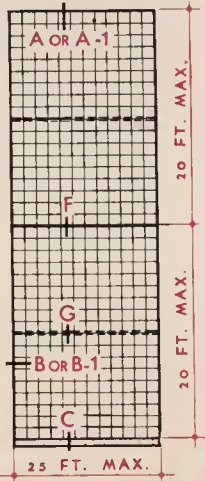
EACH PANEL 250 SQ. FT. MAX. AREA



EACH PANEL
144 SQ. FT. MAX. AREA

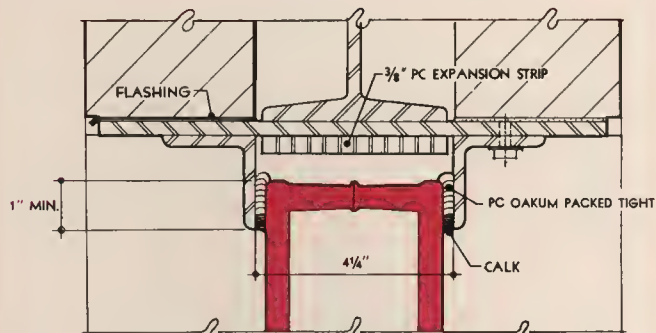


EACH PANEL
250 SQ. FT. MAX. AREA

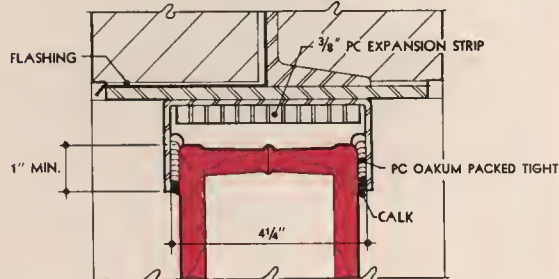


Typical panels are shown at left, and their sections are detailed in the large drawings to show principles of construction only. Structural members must be calculated for loads applied. Check local building code requirements for any possible restrictions on panel size or details. Panels over 144 sq. ft. must be properly braced to limit movement and settlement.

HEADS



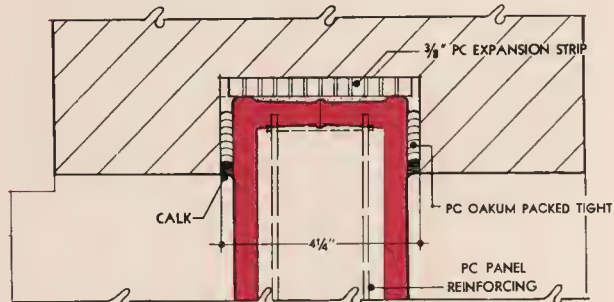
SECTION "A"



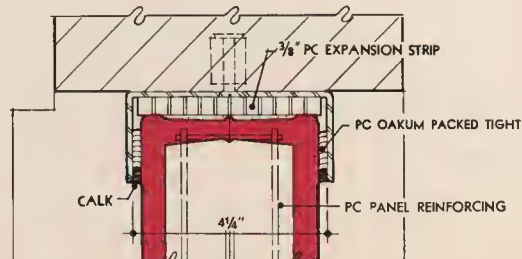
SECTION "A-1"

JAMBS

When section B-1 is used, vertical mortar joints must be compressed slightly to allow room for expansion strips.

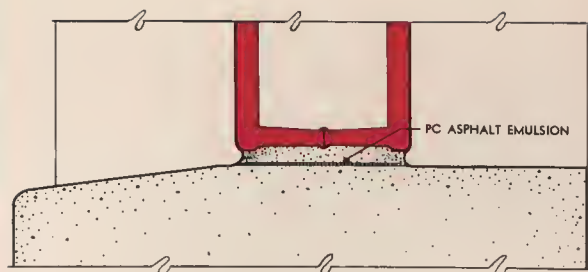


SECTION "B"



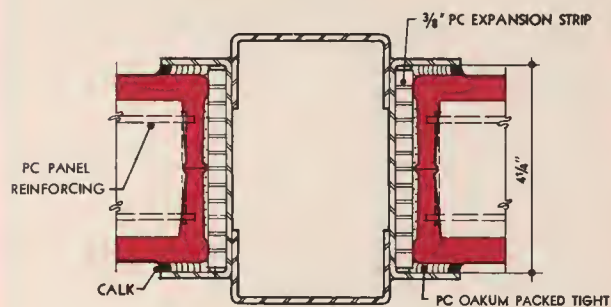
SECTION "B-1"

SILLS



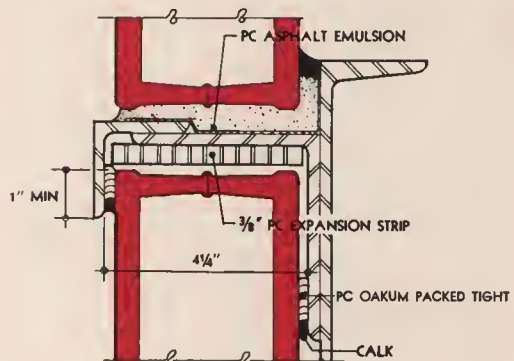
SECTION "C"

MULLIONS

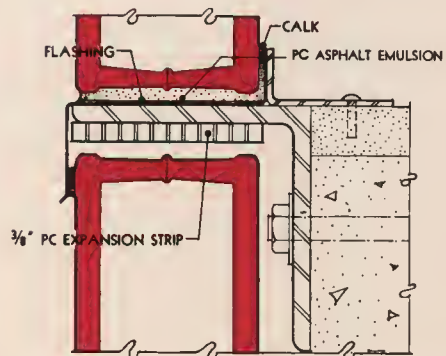


SECTION "E"

SHELVES

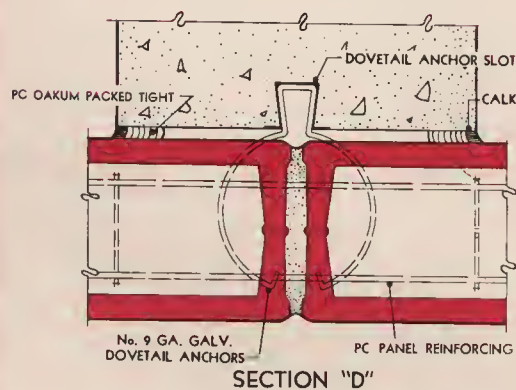


SECTION "F"

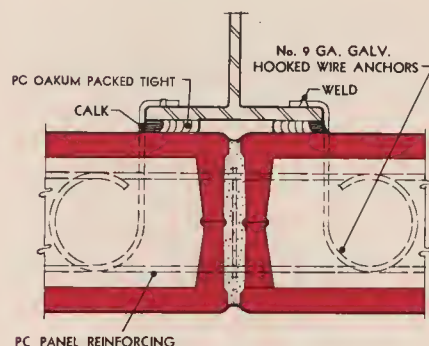


SECTION "H"

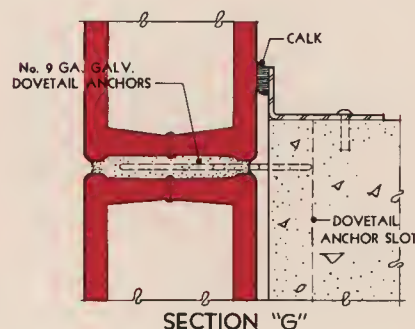
STIFFENERS



SECTION "D"



SECTION "D-1"



SECTION "G"

SCALE: 3" = 1'-0"

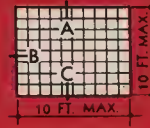
exterior panels— up to 100 sq. ft.

Typical panels are shown at right, and their sections are detailed below to show principles of construction only.

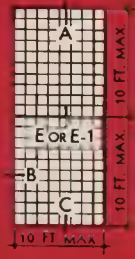
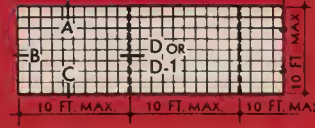
Panel anchors, shown below, provide lateral support for glass block panels. Their use is restricted only by local building codes and the discretion of the architect. If panel anchors are forbidden, use those construction shown on pages 16 and 17.

SCALE: 3" = 1'-0"

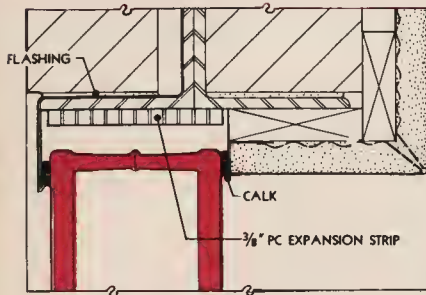
INDIVIDUAL PANELS



CONTINUOUS PANELS

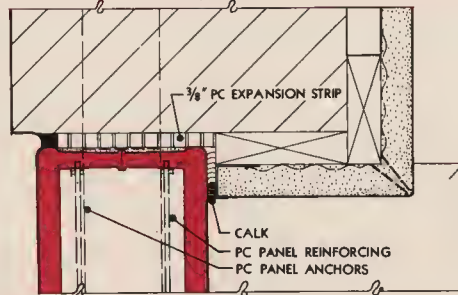


HEADS



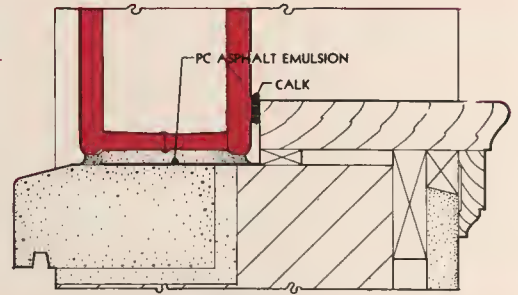
SECTION "A"

JAMBS



SECTION "B"

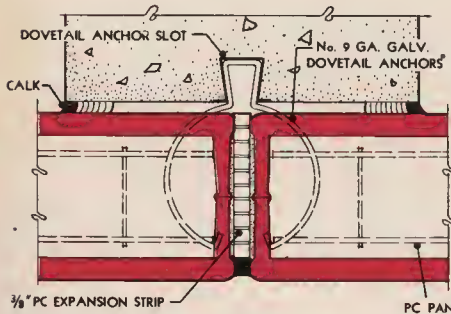
SILLS



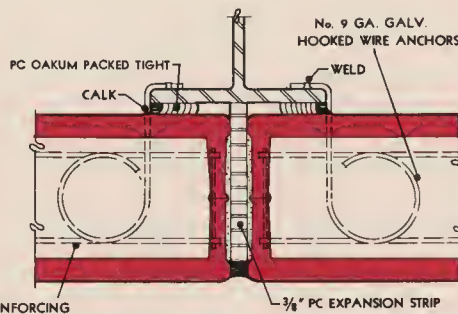
SECTION "C"

STIFFENERS

When sections D and D-1 are used, vertical mortar joints must be compressed slightly to allow space for expansion strips.

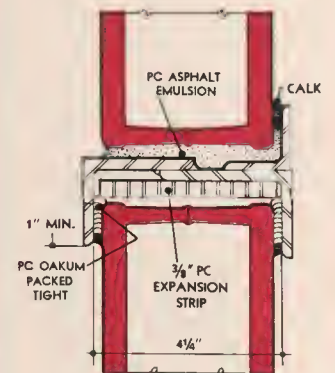


SECTION "D"



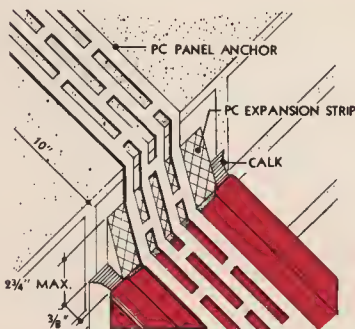
SECTION "D-1"

SHELVES

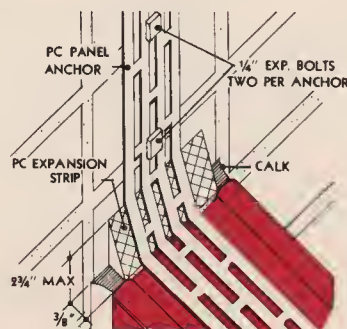


SECTION "E"

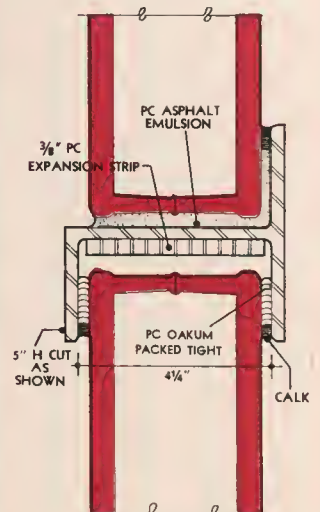
PANEL ANCHORS



NEW CONSTRUCTION



EXISTING CONSTRUCTION



SECTION "E-1"

interior panels

PC

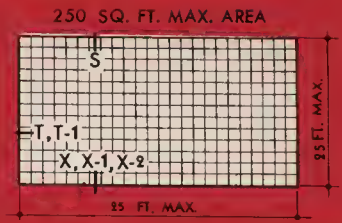
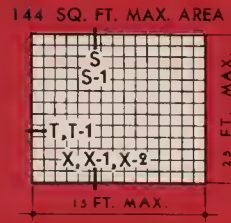
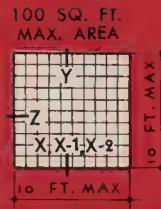
glass blocks

suggested details

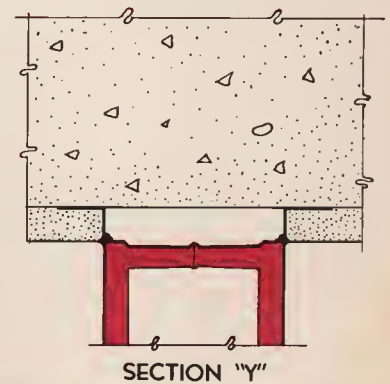
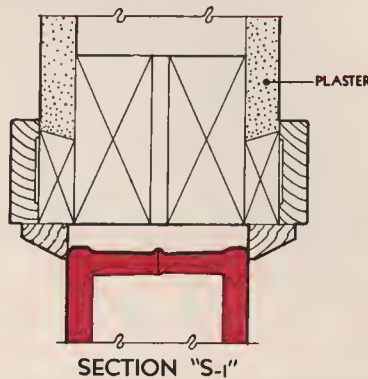
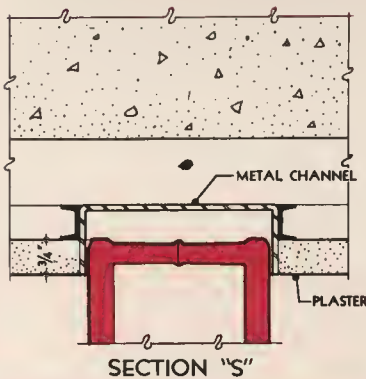
Typical panels are shown at right, and their sections are detailed below to show principles of construction only.

Panels over 144 sq. ft. must be properly braced to limit movement and settlement. Check local building codes for limitations on panel size or details. Before glass blocks are installed in wood partitions, all wood adjacent to mortar must be properly primed.

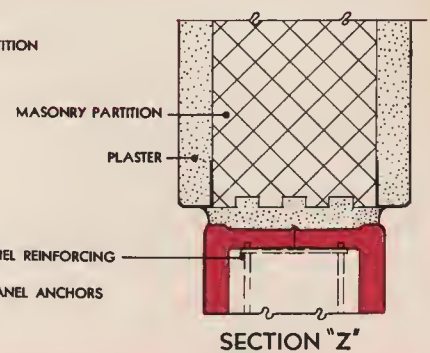
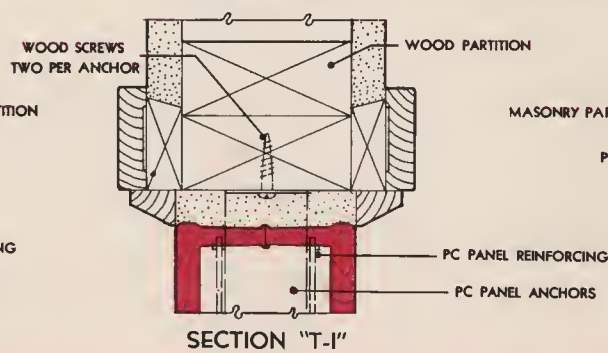
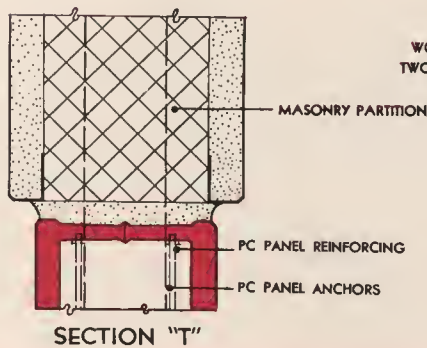
SCALE: 3" = 1'-0"



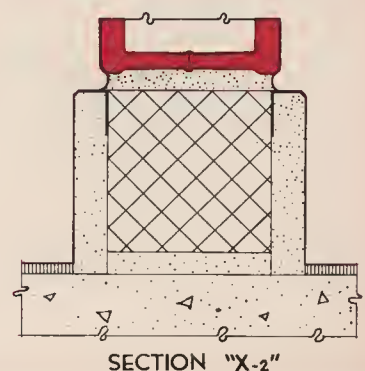
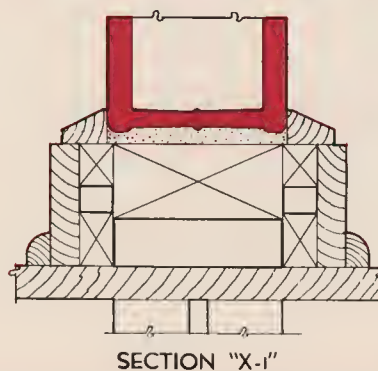
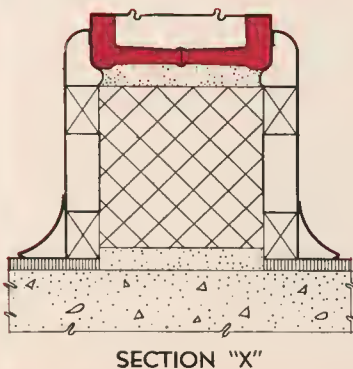
HEADS



JAMBS



SILLS



sash and block combinations

The details shown are presented to indicate the use of ribbon windows, ventilators and other types of sash in combination with PC Gloss Block panels. Most window manufacturers can furnish sash of types and finish to suit individual requirements. The ribbon window details show the Heavy type, which can be installed in lengths up to 25'-0", with maximum sash size 48" x 48". Lighter (Standard) ribbon windows are available in lengths up to 12'-0", with maximum sash size 36" x 36". All ribbon windows are factory assembled, with continuous head and sill members up to the maximum lengths noted above. Many ventilation arrangements are available. Consult manufacturers for full details.

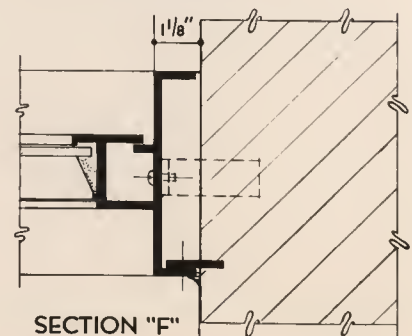
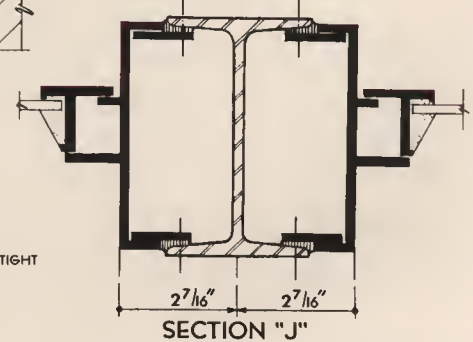
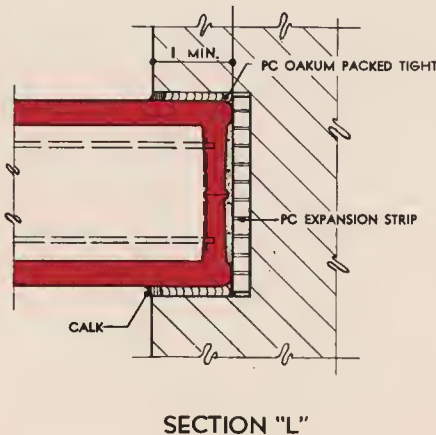
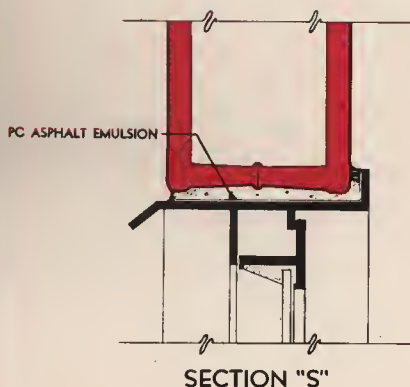
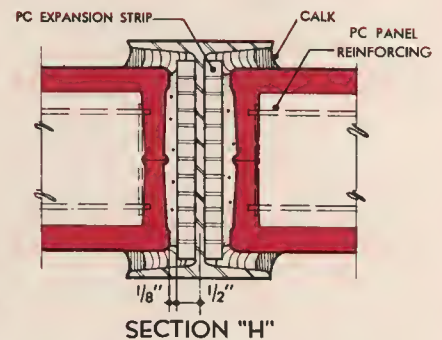
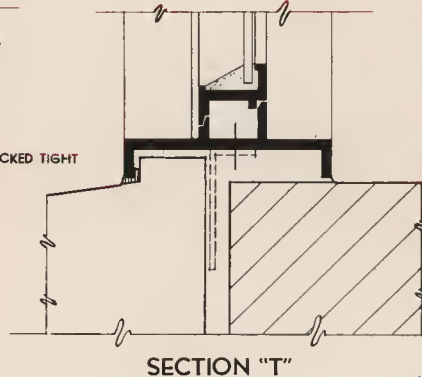
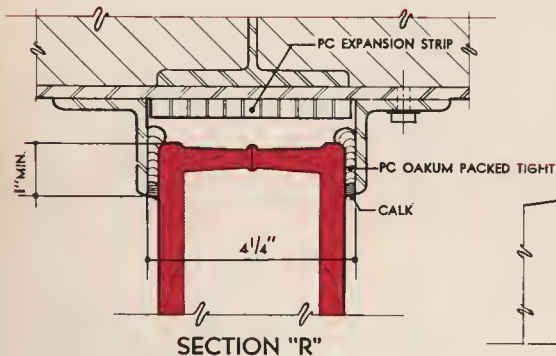
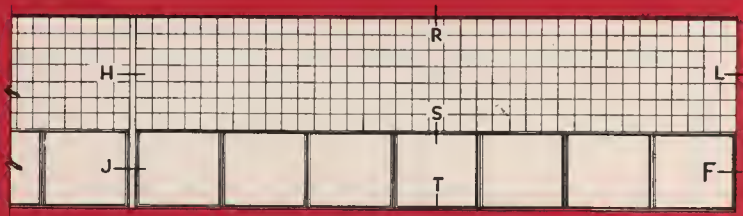
The Glass Block and Ribbon Window Standards Committee has recently recommended new standards for ribbon window and glass block combinations.

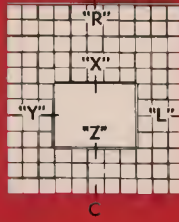
These standards simplify the selection of ribbon windows for most openings using this method of fenestration.

Write for more information about these new standards.

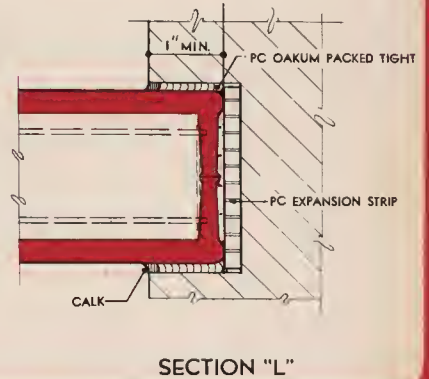
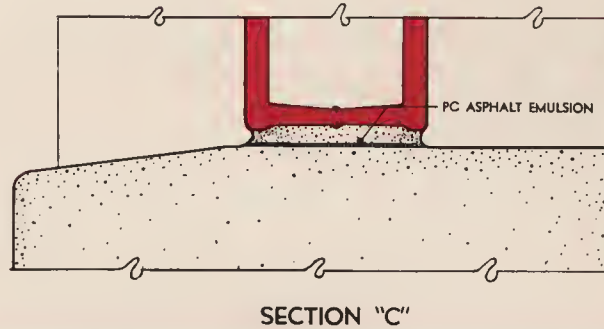
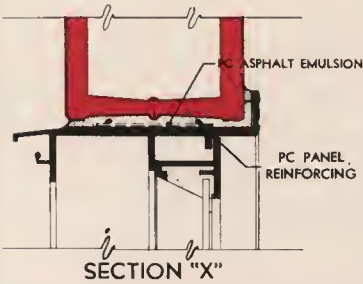
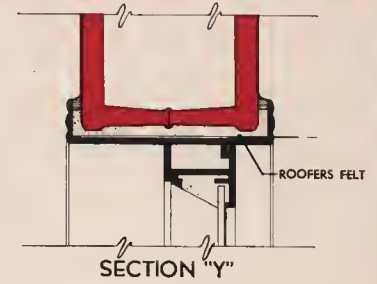
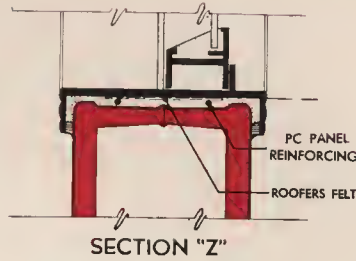
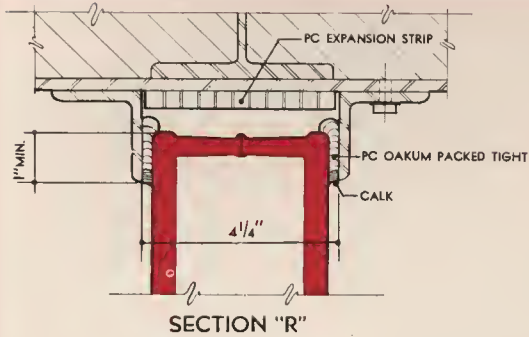
SCALE: 3" = 1'-0"

RIBBON WINDOWS

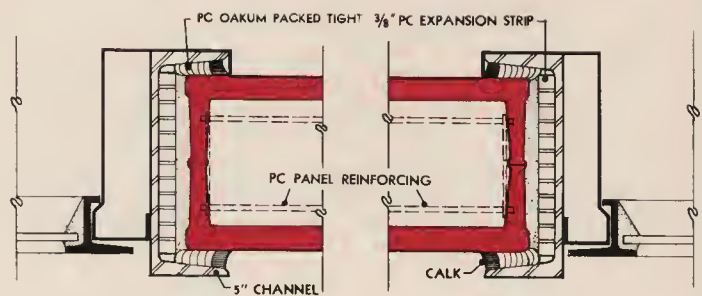
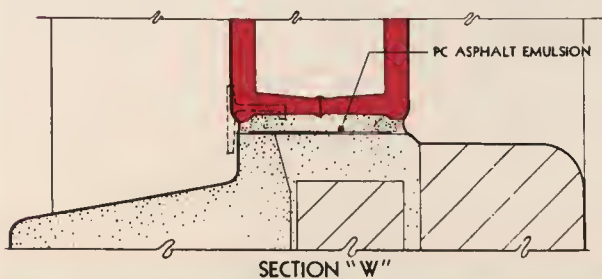
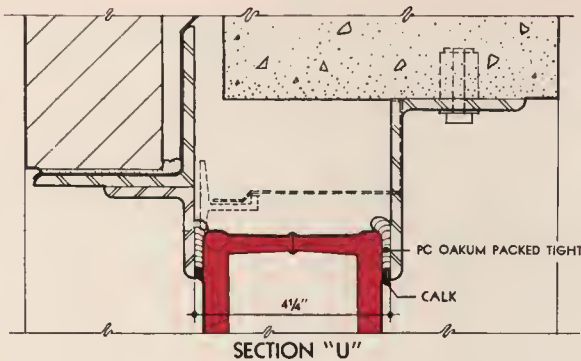
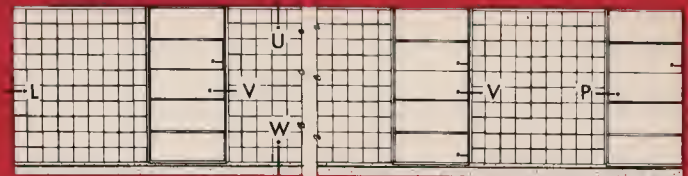




VENTILATORS



TYPICAL VERTICAL WINDOWS

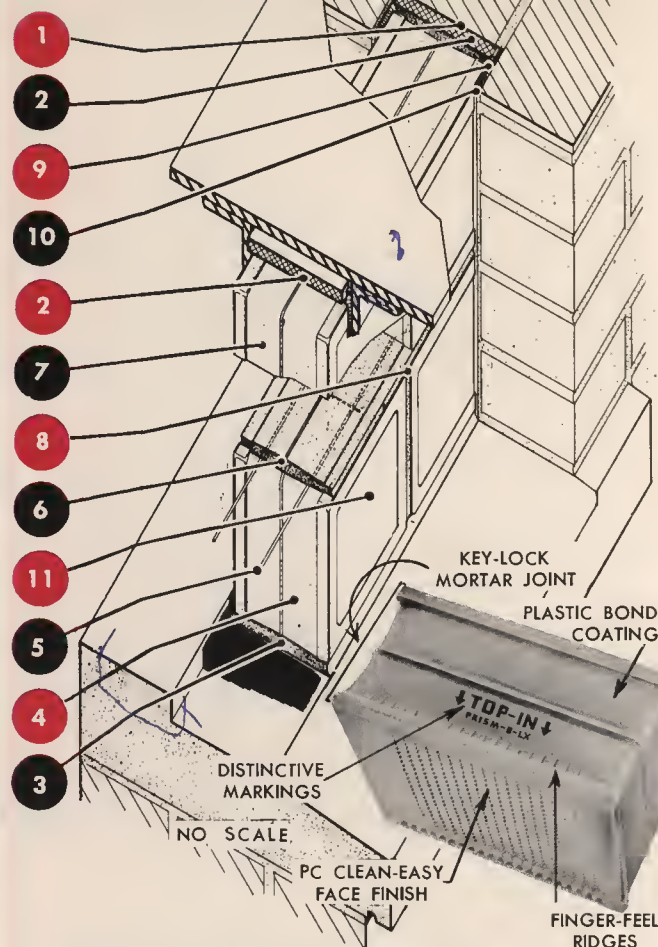


SECTION "V"

SECTION "P"

how to install PC glass blocks

1. Sill area to be covered by mortar shall have a heavy coat of PC Asphalt Emulsion.
2. Adhere PC Expansion Strips to jambs and head with gobs of PC Asphalt Emulsion. Make certain expansion strip extends to sill.
3. When emulsion on sill is dry, place full mortar bed joint—do not furrow.
4. Set lower course of block. All mortar joints must be full and not furrowed. Steel tools must not be used to tap blocks into position.
5. Install PC Panel Reinforcing in horizontal joints where required as follows:
 - (a) Place lower half of mortar bed joint. Do not furrow.
 - (b) Press panel reinforcing in place.
 - (c) Cover panel reinforcing with upper half of mortar bed and trowel smooth. Do not furrow.
 - (d) Panel reinforcing must run from end to end of panels and where used continuously must lap 6 inches. Panel reinforcing must not bridge expansion joints.
6. Place full mortar bed for joints not requiring panel reinforcing—do not furrow.
7. Follow instructions 3, 4 and 6 for setting succeeding courses of blocks.
8. Strike joints smoothly while mortar is still plastic and before final set. At this time rake out all spaces requiring calking to a depth equal to the width of the spaces. Remove surplus mortar from faces of glass blocks and wipe dry. Tool joints smooth and concave, before mortar takes final set.
9. After final mortar set pack PC Oakum tightly between glass block panel and jamb and head construction. Leave space for calking.
10. Calk panels as indicated on details.
11. Final cleaning of glass block faces shall not be done until after final mortar set.



PC Functional Glass Blocks must be set in one position only. As an aid to the mason, each block—as shown above—has a marking stamped on the top mortar edge of the inside half. For additional identification, certain patterns have a series of small ribs pressed in the glass next to this marking. When the block is laid correctly the exterior flutes will be vertical. PC Clean-Easy Face Finish allows mortar scum to be wiped away quickly and easily.

accessory materials

PC MORTAR WATERPROOFER—To be added to the mortar to conform with PC specifications. Use one (1) quart per bag of cement. (See Estimating Data on page 14.)

Available in one-quart, one-gallon and five-gallon containers.

PC OAKUM—(Non-Staining, dry-rot treated, sliver-type)—To be used as a lateral cushioning for glass block panels by tightly packing between panel faces and the supporting structure. See details for proper application.

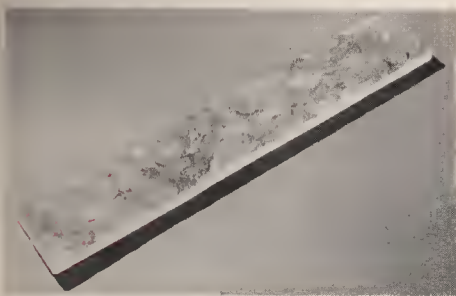
For packing both faces of panels laid up in $4\frac{1}{4}$ " wide chases, estimate $2\frac{1}{2}$ lbs. (one tube) for 30 lin. ft. of chase.

Available in wound tubes, weighing $2\frac{1}{2}$ lbs. net, packaged in handy dispenser cartons. Six individually-packaged tubes per shipping carton.

PC ASPHALT EMULSION—To be used on all sills to form a waterproof joint. Also used to adhere expansion strips to jambs and heads before installing glass blocks. See PC specifications for proper application.

For sills and adhering of expansion strips estimate one (1) gallon for approximately 150 lin. ft.

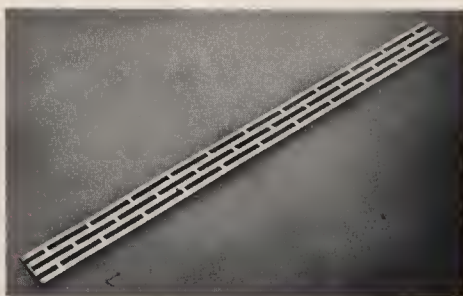
Available in one-quart, one-gallon, and five-gallon containers.



PC EXPANSION STRIPS—to be used in expansion spaces at jambs and heads installed in accordance with PC specifications.

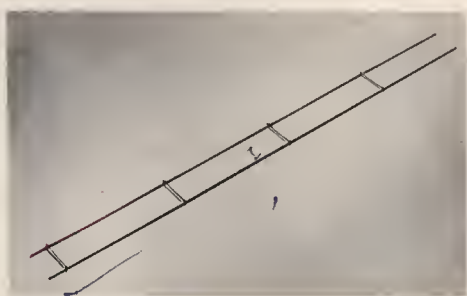
Available in the following size:
 $\frac{3}{8}$ " x $4\frac{1}{4}$ " x 24" (For use in chase construction)

For panel anchor construction, standard $4\frac{1}{4}$ " wide strips can easily be cut to 3" width required.



PC PANEL ANCHORS—To be used for supporting panels up to 100 sq. ft. in area where permitted by building code requirements. Spaced and installed in accordance with PC specifications. Panel Anchors are No. 20 gage perforated steel galvanized after fabrication.

Available in 2'-0" lengths, $1\frac{1}{4}$ " wide.



PC PANEL REINFORCING—To be used in horizontal joints of glass block panels, spaced and installed in accordance with PC specifications. Panel Reinforcing is formed of two No. 9 gage galvanized wires spaced 2" apart with No. 14 gage galvanized cross wires welded every 8".

Available in 8' lengths.

Underwriters' Listing. PC Glass Block panels, when installed in accordance with the special instructions on the glass block cartons, may be used for window openings subject to light fire exposure (Class F openings). Authorities having jurisdiction should be consulted before installation. For exact listing consult Pittsburgh Corning Corporation.



glass blocks

how to install—accessories suggested specifications

suggested closed specifications

GENERAL CONDITIONS: The "General Conditions" of the contract are a part of these specifications.

SCOPE OF THE WORK. This contractor shall furnish all labor and materials to install all glass blocks where shown on the drawings or specified hereunder. This shall include the furnishing and installation of all expansion strips, oakum packing, panel reinforcing, panel anchors, calking, asphalt emulsion, and other labor and materials necessary for a complete installation. This contract does not include the preparation of the structure to receive the glass block panels, such as chases, stiffeners, etc., except as hereinafter specified.

MATERIALS: Glass Blocks . . . shall be partially evacuated, hollow masonry units made of clear, colorless glass, as manufactured by the Pittsburgh Corning Corporation. These units shall be made by fusing two sections of pressed glass together at elevated temperatures. Edge construction of the units shall be such that a "key-lock" mortar joint is formed. Each unit shall be edge-coated with a resilient plastic to improve bond with mortar.

Patterns—Sizes . . . shall be as shown on the drawings or as specified hereunder:

(Indicate PC patterns, sizes and locations. Where applicable indicate Soft-Lite Edge.)

Expansion Strips . . . where shown or required, shall be PC Expansion Strips as furnished by the Pittsburgh Corning Corporation.

Asphalt Emulsion . . . where shown or required, shall be PC Asphalt Emulsion as furnished by the Pittsburgh Corning Corporation.

Panel Reinforcing . . . shall be PC Panel Reinforcing of galvanized steel double wire mesh formed of two parallel wires (No. 9 gage) 2 in. on centers with electrically welded cross wires (No. 14 gage) at regular intervals. This reinforcing shall be embedded in horizontal mortar joints on approximately 24 in. centers, and in joints immediately above and below all openings within panels. Reinforcing shall run continuously from end to end of panels and shall be lapped not less than 6 in. wherever it is necessary to use more than one length. Do not bridge expansion joints with reinforcing.

Panel Anchors . . . where shown on drawings shall be PC Panel Anchors as furnished by the Pittsburgh Corning Corporation and shall be No. 20 gage perforated steel strips 24 in. long by 1½ in. wide galvanized after perforating. All panel anchors must be bent within expansion joints, and shall generally be placed 24 in. apart occurring in the same joint as panel reinforcing and must be completely embedded in the mortar joint of the glass block panels.

Mortar . . . shall be 1 part Portland Cement, ¼ to 1½ parts lime, and sand equal to between 2½ and 3 times the amount of cementitious material (cement plus lime), all measured by volume, plus an integral type waterproofer. If a waterproof Portland cement is used, the integral type waterproofer shall be omitted. For interior panels the waterproofer shall be omitted. Admixtures in the form of setting accelerators and anti-freeze compounds shall not be used.

Any combinations of the above mortar mixes will fall within types A-1, A-2 or B mortar as recommended by the "American Standard Building Code Requirements for Masonry," and approved by the American Standards Association as American Standard A41.1 (as revised).

Mixing: The mortar shall be mixed to a consistency as stiff as will permit good working and shall be drier than mortar for ordinary brickwork. Retempering the mortar after it has taken its initial set shall not be permitted.

PROPORTIONS BY VOLUME

Mortar Type	Portland Cement	Hydrated Lime or Lime Putty (Allowable Range)	Aggregate	Minimum Compressive Strength of 2" Cube at 28 days (P.S.I.)
A-1	1	¼*	Between 2¼ and 3 times the volume of cementitious materials (cement plus lime)	2500
A-2	1	More than ¼ but less than ½	"	1800
B	1	½ to 1¼	"	750

*Maximum and minimum

NOTE: At the discretion of the architect or engineer, a mortar prepared from masonry cement of low volume change, incorporating a metallic stearate type waterproofer, and mixed in accordance with the manufacturer's recommendations may be specified as an alternate.

PORTLAND CEMENT . . . shall be Type 1 conforming to the Standard Specifications for Portland Cement, A.S.T.M. Designation C 150-49. If waterproof Portland Cement is used it shall be of a type as specified by the Architect. If desired, a waterproof, high early-strength Portland Cement may be used.

LIME . . . shall be a high-calcium lime, or a pressure-hydrated dolomitic lime provided that not less than 92% of all the active ingredients are completely hydrated.

SAND . . . shall conform with the Standard Specifications for Aggregate for Masonry Mortar, A.S.T.M. Designation C 144-44, for thin joints.

WATERPROOFER . . . shall be PC Mortar Waterproofer Type NV-3389 (metallic stearate type). It shall be added to the mortar at the time of mixing and in the proportion shown on the can label, except where a waterproof Portland Cement or prepared waterproofed masonry cement mortar is used. In the latter cases, no waterproofer shall be added at the time of mixing.

OAKUM . . . where indicated on drawings or required as a lateral cushioning for glass block panels at jambs, heads and intermediate supports, shall be PC Oakum (non-staining, dry-rot treated, sliver type) as furnished by the Pittsburgh Corning Corporation.

CALKING . . . shall be as specified by the architect and shall be a non-staining, waterproof mastic. This shall be evenly applied to the full depth of recesses as indicated on the details.

FLASHINGS: Unless otherwise specified, contractor shall furnish and install in locations shown or where required, flashings as are necessary to provide a complete installation.

INSTALLATION: Areas at the sill to be covered by mortar shall be given a heavy coat of asphalt emulsion which shall be allowed to dry before blocks are laid. Where required, expansion strips shall be adhered to head and jambs by the use of gobs of asphalt emulsion and shall run continuously from end to end of expansion space.

All mortar joints must be completely filled with mortar and shall not be furrowed. Mortar must not bridge across expansion joints. Blocks shall be laid straight, plumb and true to dimensions, with ¼ in., or as otherwise specified, visible width mortar joints. Joints shall be tooled smooth and slightly concave just before mortar attains initial set so that the exposed edges of the blocks are sharp, clean lines. The number of courses of blocks laid in successive lifts shall be limited to prevent squeezing out of the mortar and movement of the blocks.

CLEANING: Surplus mortar shall be removed and the faces of the blocks wiped dry at the time joints are tooled. Cleaning is facilitated by the use of an ordinary household scrub brush having stiff bristles. Final cleaning shall be done by others after mortar has attained final set.



glass blocks



Loyton School of Art, Milwaukee, Wis., Architect: John B. Waldheim Associates, Chicago, Ill.

For information on where to obtain PC GLASS BLOCKS . . .

**Contact the General Office of PITTSBURGH CORNING CORPORATION
in Pittsburgh, Pennsylvania, or the nearest sales office listed below.**

CHICAGO 6, ILLINOIS

Room 1514, The Engineering Building
205 West Wacker Drive
Financial 6-2376

KANSAS CITY 5, MISSOURI

Room 205, Fairfax Building
101 West 11th Street
Baltimore 1-7962

NEW YORK 17, NEW YORK

579 Fifth Avenue
MUrray Hill 8-8350

TORONTO, ONTARIO, CANADA

Room 503, 57 Bloor Street, West
WAlnut 1-1961

DETROIT 35, MICHIGAN

18063 James Couzens Highway
UNiversity 4-0154

PHILADELPHIA 2, PA.

Room 1205, Lewis Tower Building
225 South Fifteenth Street
Kingsley 6-3510

BOSTON, MASS.

WATERTOWN 72, MASS.
106 Galen Street
Watertown 3-0611

PITTSBURGH CORNING CORPORATION ★ One Gateway Center, Pittsburgh 22, Pa.

**POSTON BRICK & CONCRETE PRODUCTS COMPANY
2600 SOUTH GRAND AVENUE, EAST SPRINGFIELD, ILLINOIS
PHONE 8-3405**